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Application Number 10/706,190
Filing Date November 12, 2003
Inventor(s) William R. Kennedy, et al.
Examiner Name Michael J. Kyle
Attorney Docket Number KDY 9497

Art Unit 3677
Confirmation No. 5982

☒ Applicant claims small entity status.

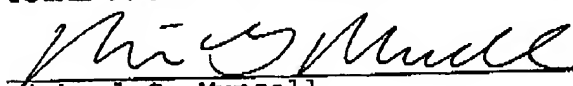
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of William R. Kennedy et al.

Art Unit 3677

Serial No. 10/706,190

Filed November 12, 2003

Confirmation No. 5982

For MINE DOOR SYSTEM WITH TRIGGER-ACTUATED LATCH MECHANISM

Examiner Michael J. Kyle

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of William R. Kennedy et al.
Serial No. 10/706,190
Filed November 12, 2003
Confirmation No. 5982
For MINE DOOR SYSTEM WITH TRIGGER-ACTUATED LATCH MECHANISM
Examiner Michael J. Kyle

Art Unit 3677

April 26, 2006

APPEAL BRIEF

This is an appeal from the final rejection of the claims of the above-referenced application made in the final Office action dated November 29, 2005. A Notice of Appeal was filed on February 27, 2006.

The Commissioner is hereby authorized to charge the fee for the appeal brief in the amount of \$250 to Deposit Account No. 19-1345. The Commissioner is also hereby authorized to charge any additional fees which may be required to Deposit Account No. 19-1345.

I. REAL PARTY IN INTEREST

The real parties in interest are William R. Kennedy and John M. Kennedy, both of Taylorville, Illinois, and Jack Kennedy Metal Products and Buildings, Inc. of Taylorville, Illinois, a corporation of the State of Delaware.

II. RELATED APPEALS AND INTERFERENCES

Appellants and appellants' legal representative are unaware of any other appeals or interferences which are related to, which would directly affect, which would be directly affected by, or which would have a bearing on the Board's decision in the pending appeal.

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PATENT**III. STATUS OF CLAIMS**

Claims 1-34 are currently pending in the application. Claims 19-27 stand allowed, claims 1-3, 12-16, and 28-34 stand rejected, and claims 4-11, 17, and 18 stand objected to as being dependent upon a rejected base claim. A copy of the claims on appeal appears in the Claims Appendix of this Brief.

Claims 28-34 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,804,329 (Landis). Claims 1-3 and 14-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,638,709 (Clavin) in view of U.S. Patent No. 4,082,331 (Kennedy). Claims 1, 12, and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Landis in view of Kennedy.

The rejections of claims 1-3, 12-16, and 28-34 are being appealed.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the final Office action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary correlates claim elements to specific embodiments described in the application specification, but does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding of the subject matter of this appeal.

With reference to the present specification and drawings, claim 1 is directed to a combination of a mine stopping 25 and a door system 21 for closing a doorway 23 in the mine stopping. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door 29 hinged adjacent the doorway 23 for swinging

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relative to the stopping 25 between a closed position and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is mounted in fixed position relative to the doorway 23. See page 5, paragraph [0022] and Figs. 2-3A and 5-9. A trigger-actuated latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position and a trigger 82, 87 operably connected to the detent in a latched position. See pages 5 and 6, paragraphs [0022] and [0024] and Figs. 2-9. The detent 51 in the latched position is biased toward an unlatched position. See page 7, paragraph [0025] and Figs. 3-5A. The mechanism 50 is constructed and configured so that actuation of the trigger 82, 87 causes the detent 51 to move from the latched position in which the detent engages the keeper 57 for latching the door 29 closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened. See pages 1 and 2, paragraph [0005], pages 11 and 12, paragraphs [0033] and [0034] and Figs. 5-9.

Claim 14 is directed to a combination of a mine stopping 25 and a door system 21 for closing a doorway 23 in the mine stopping. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door 29 hinged adjacent the doorway 23 for swinging relative to the stopping 25 between a closed position and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is mounted in fixed position relative to the doorway 23. See page 5, paragraph [0022] and Figs. 2-3A and 5-9. A latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position when the detent is in a latched, cocked position. See pages 4 and 5, paragraphs

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[0021] and [0022] and Figs. 2-9. A biasing member 97 biases the detent 51 to an unlatched, uncocked position. See page 6, paragraph [0025] and 3-5A. A sear 99 holds the detent 51 in the cocked position. See page 7, paragraph [0026] and Fig. 5A. A trigger 82, 87 operably connected to the sear 99 moves the sear away from the detent 51 to thereby cause the detent to move from the latched, cocked position to the unlatched, uncocked position. See page 7, paragraph [0026] and Figs. 3 and 5-7. The mechanism 50 is constructed and configured so that upon actuation of the trigger 82, 87, the detent 51 remains in the unlatched, uncocked position at least until the door is opened. See page 2, paragraph [0006], page 12, paragraph [0035], and Fig. 7.

Claim 28 is directed to a door system 21 for closing a doorway 23 in a mine stopping 25. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door frame 27 including a first frame member 31 and a second frame member 32. See page 4, paragraph [0021] and Fig. 1. A door 29 is hingedly mounted on the first frame member 31 for swinging relative to the stopping 25 between a closed position and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is disposed on the second frame member 32. See page 5, paragraph [0022] and Fig. 3. A trigger-actuated latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position and a trigger operably connected to the detent in a latched position. See pages 5 and 6, paragraph [0022] and [0024] and Figs. 2-9. The detent 51 in the latched position is biased toward an unlatched position. See page 7, paragraph [0025] and Figs. 3-5A. The mechanism 50 is constructed and configured so that actuation of the trigger 82, 87 causes the

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detent 51 to move from the latched position in which the detent engages the keeper 57 for latching the door 29 closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened. See page 2, paragraph [0007], pages 11 and 12, paragraphs [0033] and [0034], and Figs. 5-9.

Claim 30 is directed to a door system 21 adapted for closing a doorway 23 in a mine stopping 25. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door 29 adapted to be hinged adjacent the doorway 23 for swinging relative to the stopping 25 between a closed position and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is adapted to be mounted in fixed position relative to the doorway 23. See page 5, paragraph [0022] and Figs. 2-3A and 5-9. A trigger-actuated latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position and at least two triggers 82, 87 operably connected to the detent in a latched position. See pages 5 and 6, paragraphs [0022] and [0024] and Figs. 2-9. One of the triggers 82 is located on an inward side of the door 29 and the other trigger 87 is located on an outward side of the door so that the latch mechanism is operable from both sides of the door. See page 11, paragraph [0033]. The detent 51 in the latched position is biased toward an unlatched position. See page 7, paragraph [0025] and Figs. 3-5A. The mechanism 50 is constructed and configured so that actuation of either of the triggers 82, 87 causes the detent 51 to move from the latched position in which the detent engages the keeper 57 for latching the door 29 closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be

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opened. See pages 11 and 12, paragraphs [0033] and [0034] and Figs. 5-9.

Claim 32 is directed to a door system 21 adapted for closing a doorway 23 in a mine stopping 25. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door 29 adapted to be hinged adjacent the doorway 23 for swinging relative to the stopping 25 between a closed position and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is adapted to be mounted in fixed position relative to the doorway 23. See page 5, paragraph [0022] and Figs. 2-3A and 5-9. A trigger-actuated latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position even during movement of the keeper relative to the door 29. See pages 5, 9, and 10, paragraphs [0022] and [0031] and Fig. 3A. A trigger 82, 87 is operably connected to the detent 51 in a latched position. See page 6, paragraph [0024] and Figs. 2-9. The detent 51 in the latched position is biased toward an unlatched position. See page 7, paragraph [0025] and Figs. 3-5A. The mechanism 50 is constructed and configured so that actuation of the trigger 77 causes the detent 51 to move from the latched position in which the detent engages the keeper 57 for latching the door 29 closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened. See pages 11 and 12, paragraphs [0033] and [0034] and Figs. 5-9.

Claim 34 is directed to a door system 21 adapted for closing a doorway 23 in a mine stopping 25. See page 4, paragraph [0021] and Fig. 1. The door system 21 comprises a door 29 adapted to be hinged adjacent the doorway 23 for swinging relative to the stopping 25 between a closed position

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and an open position swung outwardly away from the stopping. See page 4, paragraph [0021] and Figs. 1, 2, and 7. A keeper 57 is adapted to be mounted in fixed position relative to the doorway 23. See page 5, paragraph [0022] and Figs. 2-3A and 5-9. A trigger-actuated latch mechanism 50 includes a detent 51 engageable with the keeper 57 for latching the door 29 in its closed position and a trigger 82, 87 operably connected to the detent in a latched position. See pages 5 and 6, paragraphs [0022] and [0024] and Figs. 2-9. The mechanism 50 is constructed and configured so that actuation of the trigger 77 causes the detent 51 to move from a latched position in which the detent engages the keeper 57 for latching the door 29 closed to an unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened. See pages 11 and 12, paragraphs [0033] and [0034] and Figs. 5-9. At least one handle 45 is mounted on the door 29 independent of the trigger 82, 87. See page 4, paragraph [0021] and Fig. 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Appellants appeal the rejections of claims 1-3 and 14-16 under 35 U.S.C. §103(a) as being obvious in view of U.S. Patent No. 5,638,709 (Clavin) in combination with U.S. Patent No. 4,082,331 (Kennedy).

B. Appellants also appeal the rejections of claims 1, 12, and 13 under 35 U.S.C. §103(a) as being obvious over Landis in view of Kennedy.

C. Appellants further appeal the rejection of claims 28-34 under U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,804,329 (Landis).

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VII. ARGUMENT

A. Claims 1-3 and 14-16 are patentable over U.S. Patent No. 5,638,709 (Clavin) in view of U.S. Patent No. 4,082,331 (Kennedy).

Claims 1 and 3

Claim 1 is directed to a combination of a mine stopping and a door system for closing a doorway in the mine stopping. The door system comprises:

a door hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper mounted in fixed position relative to the doorway; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and a trigger operably connected to the detent in a latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

Claim 1 is submitted to be patentable over U.S. Patent No. 5,638,709 (Clavin) in view of U.S. Patent No. 4,082,331 (Kennedy) in that there is no suggestion or motivation for one of ordinary skill in the art to combine Clavin with Kennedy.

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As shown in Figs. 1 and 3, Clavin discloses a door latch having a housing 11. A handle 12 and a bolt 13, 37 are rotatably mounted in the housing for moving the latch between a latched position wherein the bolt engages a door frame member (Fig. 3), and an unlatched position wherein the bolt is disengaged from the door frame member (Fig. 1). A compression spring 34 is positioned in a well 32 of the housing 11 for biasing the handle 12 toward the unlatched position so that when a trigger 40 is pushed the bolt 13, 37 releases from the door frame member. The bolt 13, 37 latch can be moved back into engagement with the frame member by pushing downward on the handle so that the handle 12 is captured by the trigger 40.

As recognized by the Examiner, Clavin fails to disclose that his trigger latch can be used in combination with a mine stopping. As a result, the Examiner relies on Kennedy as showing a latch mechanism in combination with a mine stopping. Kennedy discloses a door 1 for closing a doorway 3 in a masonry mine stopping 5 (Fig. 1). A latch 9 is used to latch the door in a closed position (Figs. 2 and 3). In the event the floor of the mine passage heaves up (within reasonable limits), the latch 9 is capable of keeping the door 1 latched closed and allowing the door to be subsequently opened.

Since neither reference provides any basis for their combination, the Examiner contends that "[i]t would have been obvious to one having ordinary skill in the art to use a trigger latch in combination with a door system in a mine stopping to provide easy actuation of the latch." In other words, it would have been obvious to one skilled in the art to install Clavin's latch in Kennedy's door system because it would allow for easy actuation of the door in the mine stopping.

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The Federal Circuit has repeatedly warned that to imbue a skilled artisan with knowledge of an invention, when no reference of record conveys or suggests that knowledge, is to fall victim to the "insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore & Assoc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 312-13 (Fed. Cir. 1983). In the case at hand, it appears the Examiner has used the teachings of the appellants against them. For example, the appellants provide in the present application that their door system requires less effort to operate compared to prior art door systems and thereby facilitates latching and unlatching of the door. See page 1, paragraph [0001]. Such a reliance on the teachings of the appellants to make a rejection is improper.

Moreover, Clavin's trigger is recessed in a housing thereby making it difficult to see and use in a mine. Visibility in mines is often very low. Often the only light provided to a miner is from a small lamp mounted on the miner's hardhat. As a result, it is desirable to provide manually operated mine components, such as door latches, with easy to see components. Clavin's recessed latch mechanism would not be easy to see in the low light conditions of a mine. As a result, one of ordinary skill in the art would not find that replacing Clavin's latch mechanism with that taught in Kennedy to be obvious.

In order to maintain a Section 103 rejection, the Examiner must present a convincing line of reasoning why an ordinarily skilled artisan would have found the claimed invention to have been obvious. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). The mere fact that a prior art apparatus may be modified to obtain the claimed apparatus does not render the claimed apparatus obvious if there is no suggestion or motivation in the

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reference to make the modification. *In re Mills*, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990). In this case, there is no suggestion or motivation to combine Clavin with Kennedy.

In addition, Kennedy teaches away from replacing his latch mechanism with the latch mechanism of Clavin. A major point of Kennedy's invention was to provide a door latch that was able to withstand heaving of the mine floor without compromising the door's usefulness. See, for example, the Abstract and the Summary of the Invention of Kennedy. Clavin's latch mechanism is not designed to withstand such movement and still remain in a working condition. Thus, replacing Kennedy's latch with Clavin's would go against the very teachings of Kennedy. As a result, it would not have been obvious to one of ordinary skill in the art to replace the latch mechanism taught by Kennedy with the one taught by Clavin since Kennedy teaches away from such a replacement.

As a result, claim 1 is nonobvious and patentable over Clavin in view of Kennedy. Claim 3, which depends from claim 1, is patentable over Clavin and Kennedy for the same reasons.

Claim 2

Claim 2 depends from claim 1 and further recites that the latch mechanism includes a sear for holding the detent in the latched position and wherein actuation of the trigger causes release of the detent from the sear.

The Examiner has taken the position that the shoulder (54) on the trigger (40) of Clavin corresponds to the claimed sear, and that the bolt (13, 37) corresponds to the claimed detent (Fig. 3). The shoulder (54) is spaced from the bolt (13, 37) as clearly shown in Fig. 3. That is, the shoulder and bolts do not contact each other. In fact, the shoulder of the trigger is

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located on the opposite side of the door from the bolt. As a result, actuation of the trigger in Clavin cannot cause the bolt to be released from the shoulder of the trigger as recited in claim 2. Kennedy likewise fails to disclose such a feature. Accordingly, claim 2 is submitted to be further patentably over the combination of Clavin and Kennedy.

Claims 14-16

Claim 14 is directed to a combination of a mine stopping and a door system for closing a doorway in the mine stopping. The door system comprises:

a door hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper mounted in fixed position relative to the doorway; and

a latch mechanism including a detent engageable with the keeper for latching the door in its closed position when the detent is in a latched, cocked position, a biasing member for biasing the detent to an unlatched, uncocked position, a sear for holding the detent in the cocked position, and a trigger operably connected to the sear for moving the sear away from the detent to thereby cause the detent to move from the latched, cocked position to the unlatched, uncocked position, the mechanism being constructed and configured so that upon actuation of the trigger, the detent remains in the unlatched, uncocked position at least until the door is opened.

Claim 14 is submitted to be patentable over Clavin in view Kennedy. To the extent that claim 14 recites the same features as claim 1, claim 14 is submitted to be patentable over Clavin

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and Kennedy for the same reasons as set forth above with respect to claim 1. That is, there is no suggestion or motivation for one of ordinary skill in the art to combine Clavin with Kennedy.

In addition, claim 14 recites that the detent can be in a latched, cocked position, or an unlatched, uncocked position. For example, in the exemplary embodiment shown in the present specification, a detent 51 is shown in the cocked position in Figs 3 and 9, and in the uncocked position in Figs. 6 and 7.

Clavin's bolts (13, 37), which were characterized by the Examiner as corresponding to the claimed detent, can be in either a latched position or an unlatched position. The latched position is shown in Fig. 3 of Clavin, and the unlatched position is shown in phantom in Fig. 1 of Clavin. However, Clavin's bolts are not moveable between cocked and uncocked positions. Thus, Clavin's latch mechanism does not include a detent that has a cocked position or an uncocked position as recited in claim 14. Kennedy also fails to teach or suggest such a feature.

Obviousness can only be established if all of the claimed features are taught or suggest by the prior art references. M.P.E.P. §2143.03 citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Since neither Kennedy nor Clavin show or suggest a detent having a cocked position and an uncocked position as recited in claim 14, claim 14 is nonobvious and patentable over the combination of Kennedy and Clavin.

Claims 15 and 16 depend from claim 14 and are submitted to be patentable over Clavin in view of Kennedy for the same reasons as claim 14.

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B. Claims 1, 12, and 13 are patentable over Landis in view of Kennedy.

Claims 1, 12, and 13

Claim 1 is submitted to be patentable over Landis in view of Kennedy in that there is no suggestion or motivation for one of ordinary skill in the art to combine Landis and Kennedy. As mentioned above, claim 1 is directed to a combination of a mine stopping and a door system for closing a doorway in the mine stopping.

Landis discloses a door latch for use on clothes closets and other interior doors. See column 1, lines 15-17. Landis does not disclose or suggest that his door latch can be used in a door system for closing a doorway in a mine stopping.

As recognized by the Examiner, Landis fails to disclose that his door latch can be used in combination with a mine stopping. As a result, the Examiner relies on Kennedy as showing a latch mechanism in combination with a mine stopping. Kennedy discloses a door 1 for closing a doorway 3 in a masonry mine stopping 5 having latch 9 for latching the door in a closed position. The latch 9 is capable of keeping the door 1 latched closed and allowing the door to be opened after heaving of the floor of a mine passage.

Since neither reference provides any basis for their combination, the Examiner contends that "[i]t would have been obvious to one having ordinary skill in the art to use a trigger latch in combination with a door system in a mine stopping to provide easy actuation of the latch." See page 5, paragraph 15 of the final Office action. In other words, it would have been obvious to one skilled in the art to install Landis's door latch in Kennedy's door system because it would allow for easy

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actuation of the door in the mine stopping. However, Landis' door latch is designed for use on closets and other interior doors. Why would one of ordinary skill in the art of mine door systems be motivated to put a door latch designed for a closet on a door in a mine stopping? Quite the opposite, one of ordinary skill in the art would be motivated not to do so. Mine stoppings and the doors therein are subject to large stresses associated with mines (e.g., heaving of the mine floor). One of ordinary skill in the art would quickly recognize that Landis' door latch would not be suitable for use under such conditions.

In order to maintain a Section 103 rejection, the Examiner must present a convincing line of reasoning why an ordinarily skilled artisan would have found the claimed invention to have been obvious. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). The mere fact that a prior art apparatus may be modified to obtain the claimed apparatus does not render the claimed apparatus obvious if there is no suggestion or motivation in the reference to make the modification. *In re Mills*, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990). In this case, there is no suggestion or motivation to combine Landis with Kennedy.

In addition, Kennedy teaches away from replacing his latch mechanism with the door latch of Landis. A major point of Kennedy's invention was to provide a door latch that was able to withstand heaving of the mine floor without compromising its usefulness. See particularly the Abstract and the Summary of the Invention of Kennedy. As mentioned above, Landis' door latch is not designed to withstand such movement and remain in working condition. Thus, replacing the latch taught by Kennedy with the door latch taught by Landis would go against the very teachings of Kennedy. As a result, it would not have been obvious to one of ordinary skill in the art to replace the latch

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of Kennedy with the one taught by Landis because Kennedy teaches away from such a combination.

As a result, claim 1 is nonobvious and patentable over Landis in view of Kennedy. Claim 12 and 13 depend from claim 1 and are patentable over the combination of Landis and Kennedy for the same reasons as claim 1.

C. Claims 28-34 are unanticipated by U.S. Patent No. 2,804,329 (Landis).

Claim 28

Claim 28 is directed to a door system for closing a doorway in a mine stopping. The door system comprises:

- a door frame including a first frame member and a second frame member;

- a door hingedly mounted on the first frame member for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

- a keeper disposed on the second frame member; and

- a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and a trigger operably connected to the detent in a latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

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Claim 28 is unanticipated by and patentable over Landis because Landis fails to disclose a door system with a detent in a latched position being biased toward an unlatched position.

Landis discloses a door latch for use on clothes closets and other interior doors. See column 1, lines 15-17. As shown in Fig. 1, Landis' door latch includes a pair of handles 4, 5, a pair of push buttons 6, 7 received in the handles, and a main spring 9 positioned between the push buttons. The main spring biases a plunger 24 to a latched position wherein the plunger is received in a jamb plate 25. The door latch can be moved to an unlatched position by pushing either of the buttons 6, 7 inward. Moving the buttons 6, 7 closer to each other causes the main spring to bend. Bending the spring allows a secondary spring 28 to move the plunger 24 to disengage and be released from the jamb plate 25 thereby allowing the door to be opened.

The plunger 24 of Landis (which the Examiner has characterized as corresponding to the claimed detent) is biased toward the latched position when it is in the latched position. It is not biased toward the unlatched position as recited in claim 28. Appellants recognize that the secondary spring 28 urges the plunger toward an unlatched position. However, this urging only occurs after the buttons have been pressed to bend the main spring and thereby move the detent to the unlatched position. In the latched position, the secondary spring 28 does not bias the plunger. As stated in Landis, "since the main spring is of greater strength than spring 28 it forces the plunger into latching position counter to the action of the spring 28." Column 2, lines 21-24. In other words, the main spring negates any biasing force that may be caused by the secondary spring. Thus in the latched position, the secondary spring has no effect on the plunger since the secondary spring's

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force is cancelled out by the main spring's force. Accordingly, the secondary spring does not bias the plunger toward the unlatched position in the latched position.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. §2131 citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Since Landis fails to teach each and every element of applicants' claimed invention, claim 28 is unanticipated by and patentable over Landis.

As a result, claim 28 is unanticipated by and patentable over Landis.

Claim 29

Claim 29 depends from claim 28 and recites that the first frame member is in opposed relation to the second frame member. The Examiner has taken the position that the door jamb 26 disclosed in Landis corresponds to the second frame member and that Landis inherently shows a first frame member.

To establish inherency, the prior art "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." M.P.E.P. §2112 citing *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Landis fails to teach, explicitly or inherently, that the first frame member is necessarily in opposed relation to the second frame member. It is possible that the "inherent" first frame member

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of Landis is adjacent door jamb 26. Since inherency cannot be established by probabilities or possibilities, Landis does not inherently teach a first frame member is in opposed relation to a second frame member.

As a result, claim 29 is further unanticipated by and patentable over Landis.

Claim 30

Claim 30 is directed to a door system adapted for closing a doorway in a mine stopping. The door system comprises:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and at least two triggers operably connected to the detent in a latched position, one of the triggers being located on an inward side of the door and the other trigger being located on an outward side of the door so that the latch mechanism is operable from both sides of the door, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of either of the triggers causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

To the extent claim 30 recites the same features as claim 28, claim 30 is unanticipated by and patentable over Landis for

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the same reasons set forth above with respect to claim 28. That is, Landis fails to disclose a door system where a detent in a latched position is biased toward an unlatched position.

Claim 31

Claim 31 depends from claim 30 and recites that the latch mechanism includes a sear for holding the detent in the latched position and wherein actuation of the trigger causes release of the detent from the sear.

The Examiner has taken the position that the spring 9 of Landis corresponds to the recited sear, and that the plunger 24 of Landis corresponds to the recited detent. In Landis, pushing either of the buttons 6, 7 causes the spring 9 to bend thereby allowing the plunger 24 to be released from the jamb plate 25. See column 2, lines 27-32. Apparently, the plunger 24 remains in contact with the spring 9 even after actuation of one of the buttons. The plunger 24 follows the bowing of the main spring 9 (column 2, lines 29-32).

The main spring 9 of Landis is not a sear nor is it equivalent to a sear. As shown in Fig. 5A and described at paragraph [0026], page 7 of the present application, the sear 99 of the exemplary embodiment is shaped to receive and hold the detent 51 in the cocked, latched position. Appellants' use of the term sear is consistent with the dictionary definition of the word sear. A sear is defined as a catch that holds the hammer of a gun's lock at cock or half cock. See www.m-w.com. The spring 9 of Landis is not a catch or sear. Accordingly, the spring 9 is not a sear as recited in claim 30.

For these additional reasons, claim 30 is patentable over Landis.

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PATENTClaim 32

Claim 32 is directed to a door system adapted for closing a doorway in a mine stopping. The door system comprises:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position even during movement of the keeper relative to the door, and a trigger operably connected to the detent in a latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

To the extent claim 32 recites the same features as claim 28, claim 32 is unanticipated by and patentable over Landis for the same reasons set forth above with respect to claim 28. That is, Landis fails to disclose a door system with a detent in a latched position being biased toward an unlatched position.

Claim 32 is further unanticipated by and patentable over Landis because Landis fails to disclose a door system having a detent engageable with the keeper for latching the door in its closed position even during movement of the keeper relative to the door. In fact, the Examiner fails to even assert in his rejection that Landis discloses this feature of claim 32.

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As explained on pages 9 and 10, paragraphs [0031] and [0032] of the present specification, a mine convergence can cause the bottom frame member 32 and keeper 57 to move. As a result, the latch mechanism 50 of this invention has been designed so that it will remain in tight latching engagement with the keeper 57 even though there is a significant change in the position of the keeper. More specifically, the detent 51 is maintained in tight engagement with the keeper 57 before, during and after the convergence so that the door 29 remains tightly closed at all times.

In Landis, on the other hand, movement of the jamb plate 25 relative to the door 1 would prevent the plunger 24 from engaging with jamb plate 25 for keeping the door 1 latched closed. Instead, the jamb plate 25 and plunger 24 would be misaligned thereby rendering the latch inoperable.

As a result, claim 32 is unanticipated by and patentable over Landis.

Claim 33

Claim 33, which depends from claim 32, recites that the latch mechanism includes a sear for holding the detent in the latched position and wherein actuation of the trigger causes release of the detent from the sear.

To the extent claim 33 recites the same features as claim 31, claim 33 is unanticipated by Landis for the same reasons as set forth above with respect to claim 31. More particularly, claim 31 is patentable over Landis because Landis fails to show a sear.

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PATENTClaim 34

Claim 34 is directed to a door system adapted for closing a doorway in a mine stopping. The door system comprises:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway;

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and a trigger operably connected to the detent in a latched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from a latched position in which the detent engages the keeper for latching the door closed to an unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened; and

at least one handle mounted on the door, the handle being mounted on the door independent of the trigger.

To the extent claim 34 recites the same features as claim 28, claim 34 is unanticipated by and patentable over Landis for the same reasons set forth above with respect to claim 28. That is, Landis fails to disclose a door system with a detent in a latched position being biased toward an unlatched position.

Claim 34 is further unanticipated by and patentable over Landis because Landis fails to disclose a door system having a handle mounted on the door independent of the trigger. The Examiner has taken the position that the handles 4, 5 of Landis are mounted independent of the triggers 6, 7. See page 3 of the final Office action. However, Landis states that the "Push buttons 6 and 7 are received axially within the handles 4 and 5,

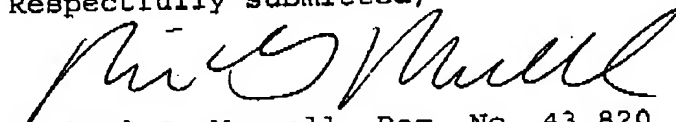
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each push button having a flared inner end 8 adapted to engage the inner flared portion of the handle and thereby limit movement thereof in an outward direction." See column 1, lines 58-62 and Fig. 1, which shows the buttons 6, 7 received in the handles 4, 5. Thus, Landis fails to show a handle mounted on the door independent of the trigger as recited in claim 34.

VIII. CONCLUSION

For the reasons stated above, appellants respectfully request that the Office's rejections be reversed and that claims 1-3, 12-16, and 28-34 be allowed.

Respectfully submitted,



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VIII. CLAIMS APPENDIX

1. A combination of a mine stopping and a door system for closing a doorway in the mine stopping, said door system comprising:

a door hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper mounted in fixed position relative to the doorway;
and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and a trigger operably connected to the detent in a latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

2. A combination as set forth in claim 1 wherein the latch mechanism includes a sear for holding the detent in the latched

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position and wherein actuation of the trigger causes release of the detent from the sear.

3. A combination as set forth in claim 2 wherein the detent is spring-biased to the unlatched position.

4. A combination as set forth in claim 1 wherein the latch mechanism is mounted on the door and comprises a quadrilateral linkage mounting the detent and adapted for maintaining the detent in the latched position even if the keeper moves relative to the door, as in a mine convergence.

5. A combination as set forth in claim 4 wherein the quadrilateral linkage includes a first pair of opposing spaced-apart links, a second pair of opposing spaced-apart links having pivot connections with said first pair of spaced-apart links, and a spring attached to the pivot connections at opposite corners of the linkage for maintaining the detent in the latched position.

6. A combination as set forth in claim 5 wherein the mechanism includes a sear for holding the detent in the latched position, the sear being pivotally connected to at least one of said spaced-apart links, and wherein actuation of the trigger

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causes pivotal movement of the sear for releasing the detent therefrom.

7. A combination as set forth in claim 6 wherein the detent is pivotally connected to at least one of the spaced-apart links and is biased to the unlatched position so that actuation of the trigger causes the detent to pivot to the unlatched position.

8. A combination as set forth in claim 7 wherein the detent and sear are sized and shaped so that the detent contacts the frame as the door is moved from the open position to the closed position for re-cocking the detent to a cocked position as the door is closed.

9. A combination as set forth in claim 8 wherein the detent is adapted to remain in the unlatched position after actuation of the trigger and prior to re-cocking to facilitate opening of the door against air pressure.

10. A combination as set forth in claim 8 wherein the sear includes a chamfer for facilitating re-cocking of the detent.

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11. A combination as set forth in claim 8 wherein the trigger is spring-biased to facilitate re-cocking of the detent.

12. A combination as set forth in claim 1 wherein the trigger is located on an inward side of the door and wherein the mechanism further comprises a second trigger on an outward side of the door so that the mechanism is operable from both sides of the door.

13. A combination as set forth in claim 12 wherein the door includes an outward handle on its outward side, the mechanism being constructed and configured so that a user can actuate the second trigger and thereafter pull on the handle without the detent moving back to the latched position.

14. A combination of a mine stopping and a door system for closing a doorway in the mine stopping, said door system comprising:

a door hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper mounted in fixed position relative to the doorway;

and

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a latch mechanism including a detent engageable with the keeper for latching the door in its closed position when the detent is in a latched, cocked position, a biasing member for biasing the detent to an unlatched, uncocked position, a sear for holding the detent in the cocked position, and a trigger operably connected to the sear for moving the sear away from the detent to thereby cause the detent to move from the latched, cocked position to the unlatched, uncocked position, the mechanism being constructed and configured so that upon actuation of the trigger, the detent remains in the unlatched, uncocked position at least until the door is opened.

15. A method of using the door of claim 14 comprising the steps in sequence:

actuating the trigger to cause the detent to move to the unlatched, uncocked position;

releasing the trigger; and

thereafter pulling the door to the open position.

16. A method of using the door of claim 15 further comprising closing the door after the door has been pulled open to re-cock the mechanism so that the detent is re-cocked and prepared for actuation.

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17. A combination as set forth in claim 14 wherein the trigger is located on an inward side of the door and wherein the mechanism further comprises a second trigger on an outward side of the door so that the mechanism is operable from both sides of the door, and wherein the door includes an outward handle on its outward side.

18. A method of opening the door of claim 17 including actuating the trigger to cause the detent to move to the unlatched, uncocked position, releasing the trigger and thereafter pulling on the outward handle to move the door to the open position.

28. A door system for closing a doorway in a mine stopping, said door system comprising:

a door frame including a first frame member and a second frame member;

a door hingedly mounted on the first frame member for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper disposed on the second frame member; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and a trigger operably connected to the detent in a

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latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

29. A door system as set forth in claim 28 wherein the first frame member is in opposed relation to the second frame member.

30. A door system adapted for closing a doorway in a mine stopping, said door system comprising:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed position and at least two triggers operably connected to the detent in a latched position, one of the triggers being located on an inward side of the door and the other trigger being

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located on an outward side of the door so that the latch mechanism is operable from both sides of the door, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of either of the triggers causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

31. A door system as set forth in claim 30 wherein the latch mechanism includes a sear for holding the detent in the latched position and wherein actuation of the trigger causes release of the detent from the sear.

32. A door system adapted for closing a doorway in a mine stopping, said door system comprising:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway; and

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed

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position even during movement of the keeper relative to the door, and a trigger operably connected to the detent in a latched position, the detent in the latched position being biased toward an unlatched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from the latched position in which the detent engages the keeper for latching the door closed to the unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened.

33. A door system as set forth in claim 32 wherein the latch mechanism includes a sear for holding the detent in the latched position and wherein actuation of the trigger causes release of the detent from the sear.

34. A door system adapted for closing a doorway in a mine stopping, said door system comprising:

a door adapted to be hinged adjacent the doorway for swinging relative to the stopping between a closed position and an open position swung outwardly away from the stopping;

a keeper adapted to be mounted in fixed position relative to the doorway;

a trigger-actuated latch mechanism including a detent engageable with the keeper for latching the door in its closed

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position and a trigger operably connected to the detent in a latched position, the mechanism being constructed and configured so that actuation of the trigger causes the detent to move from a latched position in which the detent engages the keeper for latching the door closed to an unlatched position in which the detent is disengaged from the keeper for allowing the door to be opened; and

at least one handle mounted on the door, the handle being mounted on the door independent of the trigger.

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IX. EVIDENCE APPENDIX

None.

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X. RELATED PROCEEDINGS APPENDIX

None.